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Health Seeking Behavior of Green Tobacco Sickness (GTS) on Tobacco Farmer at Jember Regency

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ABSTRACT

Background: Tobacco farmers became very vulnerable with the symptoms of GTS (Green Tobacco Sickness) are diseases that can be caused by the absorption of nicotine through the skin when farmers work in wet tobacco leaves. Based on the results of the research in the first stage about the risk factors of tobacco Farmers on the GTS mentions that there were 66% tobacco farmers are experiencing symptoms of GTS. This is confirmed by research which mentions that most tobacco farmers (54,7%) have low status of health quality. **Objective**: This research aim to analyze health seeking bihaviour green tobacco sickness (GTS) on tobacco farmer at Jember Regency. **Methods**: This research used cross sectional approach to analyze GTS healing behavior on tobacco farmers who have suffered symptoms of GTS. **Results**: Health seeking behavior of GTS symptoms of the tobacco farmers in large part with the description of the frequency is always done in sequence from the biggest percentage are: chemical drugs use by purchasing drugs in pharmacies or drug stores by 60%, then the second sequence is treating itself as done by ancestors of 38.3%, third place is to go to the doctor or midwife by 35%, the fourth was going to the hospital (26.7 percent), and the last treated with traditional medicines (3.3 percent). GTS Symptoms prevention is needed a socialization on tobacco farmers through farmer group meetings available in each village or district of tobacco production centers, by agricultural extension agents from Plantation Office of Jember. In addition, it is necessary the procurement of PPE such as gloves and long shirt made from waterproof material to tobacco farmers in order to prevent the occurrence of GTS symptoms. The most important is the improvement of health care facilities for tobacco farmers in overcoming the symptoms of GTS namely by providing doctor or midwife on standby at the health center or assistant health center in each village.

KEYWORDS: Health Seeking Behavior, Green Tobacco Sickness (GTS), Tobacco Farmer

INTRODUCTION

Indonesia is the sixth-largest tobacco producer countryafter China, Brazil, India, USA and Malawi, with a total production of 136 thousands tons, or approximately 1.91% of the total world production of tobacco.Meanwhile, three provinces : East Java, Nusa Tenggara Barat (NTB) and Central Java is the largest tobacco producer in Indonesia, both in 2009 and 2010. In 2009, these three provinces tobacco production reached 159 thousand tons or 90% of total national tobacco production.While in 2010, the production of these three provinces reached 118 thousand tons, or approximately 87% of total national tobacco production. The proportion of tobacco farmers to the agricultural workers has not changed, which stood at 1.6%. Meanwhile, the proportion of tobacco farmers to all workers declined from 0.7% to 0.6% [1].

Tobacco farmers life are very vulnerable to various aspects of life. The health aspect is one of the problems for tobacco farmers. Each work poses a risk that can affect the health of its workers, no exception for tobacco farmers.Tobacco farmers are at risk of occupational diseases related to the exposure to pesticides and the absorption of wet tobacco leaves nicotine through the skin, called Green Tobacco Sickness (GTS) [1].GTS is a disease that can be caused by the absorption of nicotine through the skin when farmers work in wet tobacco fields without wearing personal protective equipment. The disease is characterized by symptoms including headache, nausea, vomiting, fatigue [2].

GTS incidence in several countries in the world have been studied and showed a fairly high rate of incidence. Prospective studies in Brazil said 107 (82%) of the 130 sample of cases group showed symptoms of GTS including dizziness, headache, fatigue, nausea and vomiting [2]. According to the study GTS has a higher tendency occurred in the group of men, nonsmokers and working in tobacco fields during harvest. Research of Migrant Latino

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Farmworkers in the state of Carolina, United States, said 18.4% of 304 tobacco farmers are GTS positive by the presence of symptoms of itching and the wounds on the skin [3]. While the factors associated with the occurrence of GTS include age groups, the time of tobacco farming and the activities carried out in the tobacco fields.

GTS research in Indonesia is still not much done. Research conducted on tobacco farmers in Temanggung Regency mentions that the incidence rate of GTS reached 63.7% with symptoms found are dizziness, headache and fatigue [2]. While the risk factors that influence the occurrence of GTS include work experience, the posotion of the leaves picked, and the use of protective equipment. Tobacco leaf pickers who have workedin a long time, tobacco leaves pickerat the central location as well as the long sleeves wearer are less affected by GTS than the new working tobacco leaf pickers, leaves picker at top center location and not a long sleeveswearer While research in the three largest tobacco-producing provinces in Indonesia, East Java, Central Java and West Nusa Tenggara, mentioned 12.2% of tobacco farmers said that they had experienced symptoms of GTS both during and after working in the tobacco fields [4].

Jember is one of the largest tobacco producer in Indonesia. In 2011, there were 24.616 tobacco farmers in Jember spread over 24 districts. While the tobacco fields area reaches 10.009 hectares and tobacco production amounted to 6,130 tons.There are 4 types of tobacco grown in Jember, namely Na-Oogst, Voor-Oogst Kasturi, Voor-Oogst Chop and Voor-Oogst Burkleytobacco. Additionally, Jember is one area that has a high rainfall ranging from 1,969 mm to 3,394 mm with humidity ranging between 62-91% [5]. It is important considering the GTS occur when farmers work in tobacco fields that were wet from rain or dew in the morning. Until now there has been no research on the GTS in Jember. Though the number of tobacco farmers that are quite a lot and the climatological factors, namely high humidity and rainfall, are increasing the risk of incidence of GTS for tobacco farmers in Jember.

RESEARCH METHODS

Based on the research data and the available reference showed that the incidence of GTS occurrence on the tobacco farmers is high. On the other hand, GTS disease-related research is still very minimal. This study aimed to analyze the incidence of GTS on tobacco farmers in Jember. This study uses an analytical approach with laboratory test method using cross sectional approach to determine the incidence and GTS health seeking behaviour, by the interview using a questionnaire. The study population was a tobacco farmer from 2 districts in Jember. They were Mayang and Kalisat district, sampled by Random totaled 120 respondents, from April to December 2015. The dependent variable in this study was the symtoms of GTS occurrence and the health seeking behaviour on tobacco farmers. The independent variables were the characteristics of the individual. The data collected will be analyzed using the crosstab.

RESULTS AND DISCUSSION

1. Overview of Study Location

The location of this study was focused on districts in Jember, districts center for tobacco. Based on the data in the preliminary study conducted by researchers through the Plantation Office of Jember Regency in 2013, the regions in question were the District Kalisat and Mayang.In which both locations are entering a period of preparation for the harvest. So it will be easier for researchers to measure kotinin levels in the blood. Because they are in a period in which making a lot of contact with wet tobacco leaves. Here is a map of the location of study:

Jember Regency is famous as one of the major tobacco-producing areas in Indonesia. In 2011, there were 24.616 tobacco farmers in 24 districts of 31 districts in Jember. While the tobacco field area reaches 10 009 hectares and tobacco production amounted to 6,130 tons.There are 4 types of tobacco grown in Jember, namely Na-Oogst, Voor-Oogst Kasturi, Voor-Oogst Chop and Voor-Oogst Burkley tobacco. Types of tobacco became leading commodity of Jember is tobacco Na-Oogst.The advantages of this tobacco in addition to the distinctive aroma as well as its elastic character so it is suitable to be used as cigars wrapping. Besides the historical factors, it is not surprising that the Jember government make tobacco leaves as one of the images that became a symbol of the region.

Tobacco Trade system in Jember use contract system between the warehouse and tobacco farmers. It is perceived as detrimental to tobacco farmers because tobacco profits will be split on two sides while tobacco farmers is the one who will feel the impact in case of loss [4].In addition, the tobacco industry will only buy tobacco at a decent price if the moisture content of tobacco leaves meet the certain degree. Therefore, the tobacco farmers feel threatened if the field ready to be harvested is suddenly rain.This is why 70% of the 12 thousand hectares of tobacco in Jember are not harvested because of the low price. In addition, it is also caused by a number of tobacco from outside the area that are sold in Jember [6].

However, erratic climate and weather in 2013 made thousands of tobacco farmers in Jember have problems deciding tobacco planting season. In fact, usually May was an early planting season of various types of tobacco. Though the climate and weather is one of the important factors that affect the growth of tobacco plants that have an impact on the selling price of tobacco leaf [7]. Besides the impact on the economy, life as a tobacco farmer is also associated with many other aspects of life, such as health, psychological and social relationships. In terms of health, the study discusses the quality of life for tobacco farmers is very limited, especially concerning health complaints that found in many tobacco farmers.

2. Overview of Study Respondents

The respondents in this study are tobacco farmers in the district which have been mentioned above with a sample of 120 respondents. Characteristics data examined in this study include sex, age, education level, income level, marital status, reasons became tobacco farmers, types of tobacco cultivated, land tenure, the land area of tobacco, the business other than farming tobacco and partnership status with the factory cigarettes, and smoking habits or habits of exposure to cigarette smoke for nonsmokers.

Aside from the characteristics data of the respondents, the researchers also collect related data of GTS symptoms perceived by tobacco farmers such as: Dizziness, nausea, vomiting, fatigue, decreased appetite and insomnia felt during the morning when they were in the garden,as well as the efforts made by the tobacco farmers in overcoming the symptoms of GTS that appears (Health Seeking Behaviour) consisting of: no action, self treatment or self-medication, seeking treatment to traditional medicalfacilities (traditional remedy), seeking treatment by buying drugs at the drugs store (chemist shop) and the like, including to artisans herbs, as well as seeking treatment to the modern medicalfacilities that is held by the government or private healthcare agencies, which is categorized into clinics, health centers, and hospitals including seeking treatment to modern medical facilities organized by practitioners (private medicine).

3. Characteristics of Study Respondents

Characteristics Data examined in this study include sex, age, education level, income level, marital status, time being a tobacco farmer, and smoking status or not. Below is an explanation of each characteristic of tobacco farmers who became study respondents.

Table 1. Characteristics of Respondents by Gender

Gender	Frequency	Percent
Male	60	50
Female	60	50
Total	120	100

In Table 1 shows that the percentage of male and female respondents are the same for 60 people (50%). In tobacco farming, not only the men who worked in the fields, but also involves a lot of women. This condition is mostly found in tobacco farming, especially during harvest time.Tobacco leaf pickers mostly done by women and even children. As well as children at the age less than 17 years working on tobacco plantations in the USA comes from three groups: family members of farmers, migrant youth workers and local children [8].While the participation of tobacco farmers wives is usually seen at harvest time in which tobacco farmer's wife helps in picking tobacco leaves. Tobacco farmer's wife also plays a role in determining the selling price and managing the money from the sale of tobacco [9].

In terms of age, the largest percentage of the population is aged over 50 years by 39%. While the second is tobacco farmers aged between 40-49 years were 36%. The third is tobacco farmer with an age range between 30-39% by 29%.While the smallest percentage for the age of tobacco farmers are in the age range between 20-29 years by 13% and between 14-19 years by 3%. In detail the percentage of the age of tobacco farmers can be seen in the following table:

Table 2 Characteristics of Respondents by Age

Age	Frequency	Percent
>50	39	32.5
15-19	3	2.5
20-29	13	10.8
30-39	29	24.2
40-49	36	30
Total	120	100

The age distribution according Fauziah (2010) is included in the productive age category [10]. Age affects the productivity of labor. Within certain limits, increasing a person's age will increase their productivity at work and after a certain age, the productivity will decline.

The condition is strongly associated with the level of productivity of farmers to farm tobacco. As we know that almost all farming activities associated with the level of physical ability. Where farmers in the productive age will necessarily have higher productivity levels than the farmers who have entered into non-productive age. Hasyim (2006) states that the age of farmers is one factor that is closely related to the ability to work in carrying out farming activities [11]. Therefore, the age can be used as a benchmark to see the activities of a person in a work where the age conditions are still productive then most likely one can work well and maximum.

Table 3. Characteristics of Respondents by Marital Status

Marital Status	Frequency	Percent
Married	116	96.7
Not Married	4	3,3
Total	120	100

In Table 3 shows the characteristics of the tobacco farmers based on marital status. The result showed that most tobacco farmers have married status that is equal to 96.7%. A US study found that people who are single have a mortality rate 58% higher than those who were married or in pairs. In a relationship or marriage is seen as a representation of social relevance that helps a person to live longer [12].

In terms of time working as tobacco farmers, the results showed that most respondents had worked as a tobacco farmer over 10 years is 92.5%. This condition is very possible considering tobacco farmers in Jember, Sumenep and Pamekasan gain knowledge tobacco farming for generations. Although the study by Arcury et al (2005), revealed that time working as a tobacco farmer have a negative relationship with the symptoms of GTS [3]. In detail the tables of the characteristics of tobacco farmers based on timeworking as tobacco farmers can be seen in Table 4 below;

Table 4 Characteristics of Respondents by Time Working As Tobacco Farmers

Time Working	Frequency	Percent
< 10 years	9	7,5
>10 years	17	14,2
≥10 yeras	94	78,3
Total	120	100

In terms of income, the results showed that most respondents have a low income (below minimum wage of Jember regency Rp 1,095,000.00 per month) is equal to 93.3%. The nature of tobacco is a fancy product where the quality of the tobacco will determine the selling price. Although tobacco increased productivity, but if the quality is low, the selling price is also low. As for tobacco farmers partnered with cigarettes factory, tobacco quality is determined by the cigarette factory which is usually called grader. Tobacco farmers have almost no bargaining power because of the quality and price of tobacco is determined by a grader.Tobacco farmers themselves do not know the decisions related to the level (grade) of tobacco which is determined by the grader [4]. This condition eventually result in the low levels of income of tobacco farmers. To know in detail the characteristics of tobacco farmers in Jember based of the income per month can be seen in Table 5 below:

Table 5 Characteristics of Respondents Based on Income

Income	Frequency	Percent
< Rp. 1.095.000	112	93.3
≥ Rp. 1.095.000	8	6,7
Total	120	100

Table 6 shows the majority of respondents (61%) had a low level of education. Even 23% among respondents reported no school. Then the next sequence is 17% completed junior secondary school and graduated from high school at 14%, and only 5% of respondents who have graduated from college. Low education levels mean the respondent not finish primary school [13]. Based on the study result shows that the majority of respondents expressed no school or only completed primary school. This is according to study in Pamekasan and in Temanggung Regency stating tobacco farmers as study respondents have relatively low level of education [10][14]. A person's education level affects the level of knowledge, including in matters of health. With low levels of education of

tobacco farmers, then their knowledge of GTS isalso lower which includes the effort to prevent the symptoms of GTS. In detail the characteristics of tobacco farmers in Jember regency can be seen in Table 6 below:

Table 6 Characteristics of Respondents by Education Level

Education Level	Frequency	Percent
University	5	4,2
Senior High School	14	11,7
Junior High School	17	14,2
Elementary School	61	50,8
No School	23	19,2
Total	120	100

Related with smoking status, the results showed that the tobacco farmers who do not smoke have a greater percentage than the tobacco farmers who smoke, which amounted to 46.7% who smoked and 53.3% who do not smoke. This condition can occur due to the majority of tobacco farmers who were respondents in study were female.On the one hand, some studies have shown that smoking can reduce the risk of symptoms of GTS. Which means that the tobacco farmers who are women were more prone to symptoms of GTS than the male tobacco farmers.Because the men who work tobacco farmers are active smokers. Results of study by Arcury *et al* revealed that tobacco use reduces the risk of developing symptoms of GTS [3]. In detail table on the characteristics of respondents by smoking status or not can be seen in Table 7 below:

Table 7 Characteristics of Respondents by Smoking Status

Status	Frequency	Percent
Smoker	56	46,7
Not Smoker	64	53,3
Total	120	100

4. Health Seeking of GTS on Tobacco Farmers

Become a tobacco farmer is very vulnerable to the symptoms of GTS (Green Tobacco Sickness), a disease that can be caused by the absorption of nicotine through the skin when farmers work in wettobacco fields. Based on the results in the first stage about the GTS Risk Factors on Tobacco Farmers mentioned that there are 66% tobacco farmers who have symptoms of GTS in Jember Regency [15]. This was confirmed by study of Chifdillah which states that the majority of tobacco farmers (54.7%) in Jember have status of poor physical health [16].

Health-seeking behavior in terms of illness behavior refers to those activities undertaken by individuals in response to symptom experience. Health-seeking behavior is infl uenced by a large number of factors apart from knowledge and awareness. This behavior among different populations, particularly in the rural communities, is a complex outcome of many factors operating at individual, family, and community levels, including their bio-social profi le, their past experiences with the health services, infl uences at the community level, availability of alternative health care providers including indigenous practitioners, and last but not the least, their perceptions regarding effi ciency and quality of the services [17].

Health seeking behavior is an attempt or act of a person at the time of illness or accident. Action or behavior is started from self treatment to seek treatment abroad [18]. As tobacco farmers who mostly live in rural areas, health seeking behavior against a disease depends heavily on how the perception of tobacco farmers against illness and disease.If a particular symptom commonly experienced such as dizziness and nausea are not considered as illness or suffered a serious illness, then they automatically do not make the effort of treatment and healing. In the context of GTS symptoms also experienced the same thing.

The results showed that the health seeking of symptoms of GTS on tobacco farmers consists of four components, namely: (1) self treatments, (2) treatmentby using traditional medicine, (3) Treatment by using chemical drugs, (4) treatment by visitingmodern services such as a doctor or midwife, (5) make a treatmenteffort to hospital.Based on Table 4.8.1 it is known that health seeking behavior of GTS symptoms on tobacco farmers is mostly with information frequency is always carried out sequentially from the largest prosestase are: using chemical drugs by buying at pharmacies or drug stores by 60%, then the second is self treatment as done by the ancestors of 38.3%, the third order is to go to the doctor or midwife of 35%, ranks fourth is to go to the hospital (26.7%), and the fifth order is treatment by traditional medicine (3.3%).

While the behavior of tobacco farmers in the health seeking of GTS symptoms that was never done sequentially from the largest percentage are: by using traditional medicine by 83.3%, treating the symptoms of GTS by going to the hospital (51.7%), self-treatment of GTS symptoms (40%) as well as to modern health care facilities

(doctors, midwives and community health centers) amounted to 38.3% and the last order that was never done by tobacco farmers in overcoming the symptoms of GTS is the using of chemical drugs by 13.3%. In more detail it can be seen in Table 8 below :

Table 8. Health seeking behavior of GTS Symptoms On Tobacco Farmers

No	Description	Self treatment		Traditional Medicine		Chemical Drugs		modern health care facilities (doctor)		Hospital	
		n	%	n	%	n	%	n	%	n	%
1	Seldom	26	21,7	16	13,3	32	26,7	32	26,7	26	21,7
2	Always	46	38,3	4	3,3	72	60	42	35	32	26,7
3	Never	48	40	100	83,3	16	13,3	46	38,3	62	51,7
	Total	120	100	120	100	120	100	120	100	120	100

From the results of this study can be concluded that tobacco farmers in overcoming their health problems were more likely using chemical drugs that can be bought in drug stores or pharmacies, rather than using traditional medicines. This can be caused tobacco farmers prefer an easy and practical way. Meanwhile, if using traditional medicine they have to look for materials and process them first. In addition, the results of study can be concluded that tobacco farmers in overcoming GTS symptoms is very rarely use health care facilities at the hospital. Although in the quality and availability of personnel and medicine, the hospital has an advantage than other health care facilities.

Conditions such as those mentioned above can be caused by conditions of tobacco farmers in general belong to the middle and lower classes and from poor families. Proved from the the results of study that says that majority of tobacco farmers had education level of elementary and had an income below the minimum wage.This has an impact on their financial ability to access adequate health care is lacking. GTS incident is considered underestimated. This problem arises mostly on the workers community groups with poor status (low incomes) as well as the problem of the high cost of health care become a barrier for them.

The low use of health facilities such as health centers, hospitals, and so on, the mistake or cause are often thrown to the distance factor between the facility and the people that are too far (either distance physically and socially), high tariffs, unsatisfactory services, and so on. Policy makers often forget the factor of perception or the concept of illnessin the society itself. Besides the public perception of illness which incidentally is the concept of public health-illness different in each community [18]. The concept of a community group is different from the concept of healthy-illness in other groups. Public perception of the health-illness is influenced by elements of past experience and the socio-cultural elements. Traditional beliefs tend to be intertwined with peculiarities of the illness itself and a variety of circumstantial and social factors. This complexity is refl ected in the health-seeking behavior, including the use of home prescriptions. The attitude of the health provider and patient satisfaction with the treatment play a role in health-seeking behavior [17][19].

The differences in perceptions often cause problems in implementing health programs. Sometimes people do not go for treatment or using health facilities available because they were not suffering from the disease [20]. Public perception of the health-illness closely related to health seeking behavior.Both the principal will affect the use or not the health facilities provided. In the rural communities in particular, traditional medicine is still occupied the top spot compared with the other treatments.Health-illness problems are more cultural than physical disorders. Shamans that perform traditional treatments usually more acceptable to the public than doctors, paramedics, midwives, and so forth that are unfamiliar to them as well as the treatment performed and medicines are also their culture [21].

CONCLUSIONS AND SUGGESTIONS

Characteristics of study respondents indicate that on average respondents are male and female, most are married and aged over 50 years, has worked as tobacco farmers over 10 years of 92.5%, have a low income (under minimum wage of Jember regency Rp 1,095,000.00 per month) that is equal to 93.3%, have education level of elementary and have status as not a smoker.

Health seeking behavior of GTS symptoms on tobacco farmers mostly with frequency information is always done in the sequence from the largest percentage are: using chemical drugs by buying at pharmacies or drug stores by 60%, then the second is self treatment as done by the ancestors of 38.3%, third is to go to the doctor or midwife is 35%, ranks fourth is to go to the hospital (26.7%), and the fifth order is treatmentby taking traditional medicine.

GTS Symptoms prevention is needed a socialization on tobacco farmers through farmer group meetings available in each village or district of tobacco production centers, by agricultural extension agents from Plantation Office of Jember. In addition, it is necessary the procurement of PPE such as gloves and long shirt made from waterproof material to tobacco farmers in order to prevent the occurrence of GTS symptoms. The most important is the improvement of health care facilities for tobacco farmers in overcoming the symptoms of GTS namely by providing doctor or midwife on standby at the health center or assistant health center in each village.

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